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10CS36

**Third Semester B.E. Degree Examination, June/July 2018**  
**Object Oriented Programming with C++**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. Consider i is an integer and write the value of i for following expressions :
  - i)  $i = 3 + 1/2 * 5$
  - ii)  $j = 5; i = j++;$
  - iii)  $i = (\text{float}) 1/2 * 5;$  (06 Marks)
- b. With an example, explain inline function and write its advantages and disadvantages. (08 Marks)
- c. What is function overloading? Write overloading function for swap operation to swap two integers and two floating point variables. (06 Marks)
- 2 a. Explain different ways of defining member function in a class. (06 Marks)
- b. What you mean by static data member? Write a program to count number of objects created to the class using class variable. (08 Marks)
- c. With example, explain overloading of constructor. (06 Marks)
- 3 a. With an example, explain dynamic object and their use. (06 Marks)
- b. What you mean by friend function. Define a class 'distance' having feet and inches as variables and 'show' is a member function that displays feet and inches. Write a friend function which overload '+' operator to add two distance objects. (08 Marks)
- c. Write a generic function for 'swap' operation and write a program to use this function. (06 Marks)
- 4 a. What is inheritance? Explain multilevel and multiple inheritance. (08 Marks)
- b. With example, explain ambiguity in multiple inheritance. (06 Marks)
- c. Consider a class is derived by 'private' access specifier. Discuss the visibility of base class variable and techniques to access base class variable by derived object. (06 Marks)

**PART – B**

- 5 a. Describe the order of constructor invocation in multilevel and multiple inheritance. (08 Marks)
- b. Explain the concept of 'Granting Access' in inheritance. (06 Marks)
- c. With a diagram, explain the need of 'virtual' base class. (06 Marks)
- 6 a. Explain pure virtual function and abstract class and also write the need of abstract class. (08 Marks)
- b. With example, show how derived object member function can be called through base class reference. (06 Marks)
- c. Explain early and late binding. (06 Marks)

- 7 a. Write the output for following program.

```
#include <iomanip.h>
#include <iostream.h>
int main() {
    cout << hex << 110 << endl;
    cout << setfill('*') << setw(10) << 123.0 << endl;
    bool b = true;
    cout << b << " " << boolalpha << b;
    return 0;
}
```

(06 Marks)

- b. Consider a student record consists of Roll\_No, Name and Marks. Write a program to enter the given number of student records and place in a new file called 'test.txt' (Use C++ file handling classes). (08 Marks)
- c. Explain following stream handling function : (06 Marks)
- i) read( ) ii) seekg( ).
- 8 a. Explain the general form of exception handling technique. (08 Marks)
- b. Write a suitable program to 'catch' all type of exceptions thrown by a try block. (06 Marks)
- c. Write a short note on 'List' class from STL. (06 Marks)

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